

# **East Asia and Pacific Environmental Initiative (EAPEI)**

## **Implementation Progress Report December 1999**

### **I. BACKGROUND**

The *East Asia and Pacific Environmental Initiative* (EAPEI) was established to continue US Government assistance for fire and haze preparedness and prevention and to establish broader long-term efforts focused on other key regional environmental problems in the East Asia and Pacific (EAP) Region. The EAPEI follows the *Southeast Asia Environmental Initiative* (SEAEI) Program, which was a one-year program funded in US Fiscal year 1998 (FY98). Earlier Reports on EAPEI (*Program Summary, September 1999*) and on SEAEI (*Program Description, August 1998*, and *Implementation Status Reports of November 1998 and of March 1999*) provided background, descriptions, and implementation status for each activity approved for US Government support. This and subsequent reports will provide further information to update the progress on implementing activities under both initiatives.

Activities in this progress report are presented according to the goal areas and objectives that have been proposed for the FY 2000 EAPEI program. The three broad goal areas are:

- ◆ Improved Forestry and Land Use Management
- ◆ Improved Coastal Resources Management
- ◆ Improved Environmental Planning and Management

### **II. IMPLEMENTATION PROGRESS**

#### **A. GOAL A: IMPROVED FORESTRY AND LAND USE MANAGEMENT**

Goal A of the EAPEI incorporates and continues the activities of the SEAEI with a focus (1) improved fire management and prevention, (2) better forest management techniques and policies, and (3) improved forest biodiversity conservation.

##### **Objective A.1. Improved Fire Management and Prevention**

###### **◆ (1) Regional Fire Coordination**

Since August 1998, the United States Forest Service (USDA/FS) has provided technical assistance to strengthen fire management in Southeast Asia. Assistance has been in the form of short to medium-term assignments of fire management specialists, during three discrete timeframes. Thus far, a total of seven personnel (six USDA/FS and one Bureau of Land Management) have served in these assignments. To ensure continuity and maintenance of relationships, one fire management specialist has served a lead role for all activities.

The majority of activities are conducted under the auspices of the ASEAN Senior Officials on the Environment, Haze Technical Task Force (HTTF) and the Sumatra/Borneo Sub-Regional Fire Fighting Arrangement (SRFA). USFS fire management specialists have worked out of the Jakarta ASEAN Secretariat building in conjunction with an Asian Development Bank-funded regional technical team. Since September 1999, USFS work has been conducted in conjunction with the ASEAN Coordination and Support Unit, a recently created work unit to support implementation of the Regional Haze Action Plan.

Emphasis is placed on capacity building and mentoring, with a long-term objective of sustainability. USFS employees have served as technical advisors on teams led by Indonesians and mentored counterparts in

envisioning, designing, coordinating, and implementing fire management activities. Generally, the work is accomplished “behind the scenes” with counterpart national staff assuming lead roles.

Determination of the specific nature of fire management activities is based on results from previous activities or evaluation of expressed needs. The activities thus far have been sequential in nature and build from findings and foundations of previous activities.

The **primary activities** have been:

- Catalyzed and provided expertise in designing and coordinating and assessment of ASEAN fire suppression capabilities. Assessment teams were deployed in Indonesia, Malaysia, Brunei, Philippines and Singapore (September - November, 1998).
- Developed a conceptual model for a regional fire suppression mobilization plan (November, 1998).
- Catalyzed and provide technical expertise for a pilot project developing a fire suppression mobilization plan for Riau and South Sumatra provinces (March – May, 1999).
- Provided technical expertise to develop, implement, and evaluate a fire response simulation exercise for Kampar District, Riau Province (October, 1999).

**Other activities** include:

- Working in conjunction with ASEAN, for example, technical review of fire management activity proposals.
- Mentoring and providing technical advice to counterpart staff and other individuals working in forest and land fire suppression.
- Exploring partnership options to establish a three-month fire management training opportunity for aspiring Indonesian fire managers.

## ◆ (2) Coal Seam and Peat Fire Suppression

Since July 1998, the Department of Interior, Office of Surface Mining (OSM) has provided technical assistance to address peat and coal seam fires. This assistance was provided to establish a capability for quick action on those fires which present a threat to human health and safety, the environment, other resources, and infrastructure and to assist in establishing a long-term capability within the Ministry of Mines and Energy to respond to coal/peat fires.

The activity started quickly under an existing agreement of OEM with the Indonesia Ministry of Mines and Energy (MME) and benefited from the technical and managerial expertise of a permanent in-country Project Director from OSM, who was posted in MME. The activity has accomplished the following:

- Coal and peat fire reconnaissance was undertaken and comprehensive inventory developed of coal seam fires in the Indonesian Province of East Kalimantan. The Project Director also visited Malaysia to consult on the suppression of peat fires.
- Coal and peat fire training course were developed with six Indonesian and Malaysian officials and the course was given to 46 students in Jakarta in February 1999. Included in the course was field work to classify and suppress fires.
- Policy was improved through a Ministerial Decree on October 7, 1999, (Decree No. 1539 K/20/MPE/1999), that established policy regarding coal fire suppression for the Ministry. The decree

clarifies the Ministry's responsibility to extinguish coal fires, assigns the lead for implementing the program to Kanwil offices (regional offices of the Ministry) and authorizes use of the Coal Royalty Fund to support the activities.

- Donor coordination has been promoted coordination through consultations, including the Project Director's presentation of a paper on coal fires in Indonesia and OSM's project at the at the Second International Symposium on Operationalization of Remote Sensing in Enschede, Netherlands
- Public-private partnerships have been established between a number of East Kalimantan government agencies, Mulwarman University, research organizations and the Ministry of Mines and Energy.
- Decentralization has been promoted. The East Kalimantan Kanwil has taken lead responsibility in for coal fire suppression. This initial exercise for a regional office of a Ministry assuming lead responsibility for a specific project serves as a useful model for the Ministry as it proceeds with activities that respond to national legislation that mandates the transfer of program responsibilities from Jakarta to regional and local arms of the Ministry and to regional and local government.
- Permanent funding has been identified for coal seam fire suppression through the MME Coal Royalty program. The Ministry has included a request for Rp24 billion for coal fire suppression in its current budget request, and these funds will likely be obtained from the Royalty account.
- Program descriptions, activity reports, and assessments have been published, and there has been excellent local and regional press coverage for the activity.

## **Objective A.2. Improved Forest Management Techniques and Policies**

### **◆ (3) Causes and Impact of Fires**

This activity received funding from SEAEI in response to the devastating fires that occurred in Indonesia in 1997 and 1998. It is being implemented by a research partnership involving the US Forest Service's Remote Sensing Applications Center (RSAC) in Salt Lake City, the Center for International Forestry Research (CIFOR) and the International Center for Research in Agroforestry (ICRAF), both in Indonesia. Rather than quick generalizations and conclusions about the causes of the fires, this assessment is objectively analyzing the different scenarios under which the fires occurred. It is the only evaluation which directly links the events on the ground with satellite imagery and aerial photography. The following has been accomplished:

- Eight case study sites have been chosen to represent different situations from fires caused by small holders alone to sites where several actors such as the timber and oil palm industry are involved. The sites are also representative geographically with 4 sites chosen in the island of Sumatra and 4 sites in Kalimantan. Work has been occurring on several sites simultaneously including coordination between field studies and remote sensing imagery. With regard to the remote sensing analysis, thousands of images were looked through to find the appropriate images for a before and after analysis. Aerial photography has also been taken over some of the sites represented by satellite imagery. Overall, basic data has been compiled and is currently being analyzed.
- Hotspots have been verified as burned areas and investigations have been determining the causes of fires. Community mapping with overlays of burnt areas is a component of the analysis. Cases of small holder to large-scale plantation burnings are being documented. A history is being taken of the land use changes over time which directly contribute to poor forest health and increased susceptibility to burning. An interesting preliminary finding is that the great extent of fires is not only caused by intentional burning but also by the lack of motivation by people to put them out before the fires become uncontrollable. People's of lack of response is related to the fact that they do not have secure

land tenure and therefore little or no incentive to protect forest and land from fire. To date, data collection at one field site has been completed and the others will be finished over the next several months from March to July 2000.

Posters and summary reports will be produced and disseminated after each case study has been completed and they will combine analysis from the field with remote sensing images. From August to November 2000, information collected from all case study sites will be synthesized to report on the major findings related to the underlying causes of the fires. The report will include a description of the situations under which fire occurred, the underlying causes and its environmental impacts. It will quantify the area burned within the pilot sites according to cause. The feasibility of extrapolating from pilot site to province will also be assessed. The report will also present recommendations for policy and for technical assistance.

In addition to the site-specific and final reports, it is anticipated that briefings of the results will occur in December 2000 for relevant government and non-government stakeholders. Reports and materials will be translated and targeted to these specific audiences to raise awareness of the issues.

There was some initial delay in starting due to waiting for funds to be transferred to CIFOR. Currently, agreements with local NGOs need to be negotiated for two sites in West Kalimantan. Preliminary data have already been collected for these sites during the site-selection process. Also, the final budgets to finish the assessment is being calculated. If money is short, there may be only be 6 or 7 sites evaluated. In early November, there was a coordination meeting among remote sensing and ground researchers to take stock of progress to date and future work plan. Concrete benchmarks were established for completion and the working relationships among all partners were strengthened.

#### ◆ (4) Alternatives to Slash and Burn Agriculture

This activity of the International Center for Research on Agroforestry (ICRAF) with the USDA Forest Service focuses on policy reform and extension of technical innovations as alternatives to slash and burn agriculture in Southeast Asia. Four areas of concentration include: (1) policy development for community forestry and agroforestry; (2) timber marketing and trade policy reform; (3) extension innovations to facilitate implementation of alternatives to slash and burn; and (4) collaboration with understanding the underlying causes of the fires.

This project was approved at the end of FY1998 and was initiated 1999. The following are the accomplishments to date.

##### Component 1. Policy development for community forestry and agroforestry

- A cluster of five community forestry sites were identified in the key research watershed of Sumberjaya, Lampung, Indonesia. This cluster will be the locus for a series of case studies on local efforts to secure land rights and tree tenure in a watershed representing conditions where there has been widespread settlement on protected state forest lands for the production of coffee. This area is a challenge because the Ministry of Forestry perceives the activities of the farming population unfavorably, and has implemented a vigorous, but unsuccessful effort to displace households farming within the forest area.
- The policy team conducted a series of community surveys over several weeks at the Sumberjaya watershed to characterize the farming systems, demographics, and document the nature of the tenurial conflicts between villagers and the State. Six more weeks of field work are currently in progress in this area where a partner NGO has taken up residence.
- ICRAF's national policy analysis team worked intensively on a day-to-day basis as part of the inner group involved in the development of the new Forestry Law for Indonesia. Now that the Law has

been adopted by the parliament, the team is continuing to work intensively as part of the process of developing the implementing regulations and guidelines for the law.

#### Component 2. Timber marketing and trade policy reform

- An ICRAF policy memorandum that recommended a major reduction in the export tax structure for farm-grown species of timber is under review in the Ministry of Finance. The current uncertainty related to the democratic transition in government has made progress in this area problematic for the time being.

#### Component 3. Extension innovations to facilitate implementation of alternatives to slash and burn

- To promote smallholder tree production systems, village level workshops were convened by ICRAF and collaborating institutions in three Lampung, Indonesia villages and farmers' preferences for trees were identified. A set of evaluation trials were implemented to investigate the comparative performance of a range of prospective species suited to smallholder timber production.
- The data obtained from the 'species by elevation' trials in Mindanao, Philippines were analyzed and two draft manuscripts were completed. A draft extension manual was completed that contains recommendations from the research trials about the optimal species to produce at different elevations in the buffer zones outside Kitanglad National Park.
- The experience of the innovative farmer tree seed organization that has evolved in Lantapan, Mindanao, was analyzed and written up.
- To promote an innovative program in conservation farming, this project's team wrote a major concept proposal in August, 1999, that aims to undertake research and development activities that will result in a complete revamp of the Indonesian National Regreening Program. This large program has implemented soil conservation and tree planting in watersheds throughout the country for many years. However, it is increasingly evident that the program has not accomplished its objectives, even though large sums of national and international funds have been invested. The proposal espouses a participatory approach that is based on a new generation of technical and institutional innovations, particularly the approach of farmer-led landcare groups. The proposal was circulated and a special seminar was held in September to discuss it in depth.
- In November, the director of the division of reforestation and land rehabilitation, Mr Hadi Pasaribu, arranged a visit by himself and his team to ICRAF in Bogor. He strongly endorsed the new strategy for the National Regreening Program and requested ICRAF to begin working vigorously with the Ministry to fully implement the program of research and development. ICRAF agreed with the

proposal and has appointed a point person to liaise closely with the Ministry to operationalize this initiative.

- The number of Farmer-Led Landcare groups in Mindanao expanded to over 200 in six municipalities. The Governor of Bukidnon Province convened a one-day workshop on Landcare attended by all the Mayors and provincial line agency staff. The Landcare approach was strongly endorsed. The output of the meeting was the declaration of a provincial-wide Landcare program. The chairman of the League of Provincial Mayors committed to working with ICRAF to extend Landcare to all municipalities.

#### Collaboration with understanding the underlying causes of the fires

- Remote sensing images are being acquired to assess land-use changes and burned areas.
- An ASB site in Jambi, Indonesia will be a case study site for the fire assessment.

#### ◆ (5) Reduced Impact Harvesting (RIH) – Indonesia

This project received funding from SEAEI in order to maintain and promote healthy forests through reduced-impact harvesting techniques in Indonesia. By reducing the damage done to forests during the logging process, the forests may be able to withstand future forest fires. The USDA Forest Service is implementing this activity through the Tropical Forest Foundation (TFF). The TFF is an NGO partner that was chosen because of its years of experience promoting reduced-impact harvesting techniques in the Brazilian Amazon. Implementation progress is the following:

- TFF has hired a coordinator to establish and direct training within Indonesia. He will also be responsible for linking with other Asian countries and the Asia-Pacific Forestry Commission.
- Significant steps have been taken in establishing the project through meetings with relevant stakeholders such as government officials, concessionaires, NGOs (e.g. Lembaga Ecolabelling Institute), international donors and research institutions. These meetings have resulted in two Memorandums of Understanding. The first MOU with the Indonesian Association of Concessionaires (APHI), states that the association will provide office space and assist the coordination of training and demonstration of reduced impact harvesting. The second MOU with the Center for International Forestry Research (CIFOR) defines a collaboration for the training of concessionaires in East Kalimantan.
- A review of existing training materials is underway in order to assess applicability to the Asian context. Further training modules will be developed. In the next year linkages with forest training institutions, concessionaires and NGOs will be strengthened. For example, they are now planning to carry out a regional workshop on taking stock of reduced-impact harvesting techniques to date and ways to promote wide-scale implementation.
- A working relationship with one concessionaire (Alas Kusuma) is beginning to be formed.

The project was delayed in starting due to the difficulty in finding an appropriate candidate for a coordinator to be based in Indonesia. Also, the Executive Director of TFF mentions that the political uncertainty in Indonesia also delayed start-up. With the employment of the coordinator, activities will be progressing and a plan of work has been approved.

#### ◆ (6) Reduced Impact Harvesting (RIH) – Regional

This project received funding from EAPEI in order to better understand the implications and effectiveness of reduced impact harvesting and develop local capacity and support to implement appropriate reduced impact harvesting techniques in the Region. The Asia-Pacific Forestry Commission, FAO, CIFOR, Virginia Technology University, Harvard University and the Japan International Forestry Promotion and Cooperation Center are the key partners for this project and were chosen to implement various aspects of the project. To date, the following activities have been completed or are being planned within the next 6 months:

- A study tour of reduced impact logging practices and potentials has been conducted in Sabah, Malaysia from March 16-19, 1999. The objective for the study tour was for high level forestry officials from the region to view and discuss various aspects of reduced impact harvesting and related forest harvesting and silvicultural practices.
- In order to disseminate information and provide a forum for discussion on reduced impact harvesting, an electronic network has been established through the support of this project. The network titled RILNET has over 300 subscribers and has been actively sharing information since July, 1999. A

website is currently being developed to serve a wider audience. The website will house more detailed information and publications and serve as an archive for RILNET information.

- Support was provided to draft a proposal for consideration at ITTO. In November, 1999 the proposal was accepted and funded for \$110,000. The proposed activities will help to support development of a training strategy and the State of the Art Workshop described below.
- In February 2000, the Asian-Pacific Forestry Commission plans to hold a workshop to develop appropriate training strategies for reduced impact harvesting. The reason for this approach is that the study tour participants thought it was important not to rush into training of logging crews, but to first deliberate on generic training strategies that can be adapted for specific countries or situations. A consultant is currently drafting a background paper which will be used as a starting point for the workshop.
- Planning is underway to conduct a reduced impact harvesting state of the art workshop for June or July of 2000. A planning meeting of the principals will be held in late January or early February. The objectives of the workshop will be to gather the current state of reduced impact harvesting and share it with policy makers, managers and implementors. Besides the interaction and sharing, it is expected that proceedings will be published to share with a wider audience in the region.
- Preliminary discussions are underway to conduct economic benefit/costs studies. The approach will use a case study format, building upon the existing data. Currently, three different study areas (two in Malaysia and one in Indonesia) are being considered.

### **Objective A.3. Improved Biodiversity Conservation**

#### **◆ (7) Improved Forest Conservation Management**

The recent economic upheavals in Indonesia are generating unprecedented pressures on the country's spectacular biodiversity. At the same time, the economic crisis presents "once-in-a-lifetime" conservation opportunities requiring special attention and resources. The Nature Conservancy (TNC) is actively pursuing two particularly promising, high-leverage opportunities: debt-for-nature swaps and sustainable forestry. The EAPEI funding was provided to TNC activity through the USAID Leaders and Associates Cooperative Agreement (LWA) in September 1999. TNC has prepared a work plan for the activity and is starting field implementation as presented below.

#### **Debt-for Nature Swaps**

The *Indonesian Debt-for-nature Swap Initiative* is being implemented through a joint, five-year program carried out by The Nature Conservancy, World Wildlife Fund – US, and Conservation International). In the wake of the economic crisis, the Government of Indonesia (GOI) has been forced to slash funding for national parks management by 30% in the FY 1999 budget, which represents a 60% reduction in real terms. To respond to the adverse biodiversity impacts and promising opportunities resulting from the financial crisis (including Indonesia's huge external debt burden of \$138 billion), innovative approaches must be harnessed. Debt-for-nature swaps represent one such approach, and while they are not an answer to the current economic problems, they can raise additional funding for biodiversity conservation while reducing Indonesia's debt burden.

- Four conservation organizations working in Indonesia have recently formed a DFNS Steering Committee: the Indonesian Biodiversity Foundation (KEHATI), CI, The Nature Conservancy and WWF.

- An Advisory Committee of Washington, D.C.-based representatives from the latter three groups, and USAID's Natural Resources Management (NRM) Program in Indonesia, are currently providing expertise and technical assistance in support of these efforts.
- The Indonesian Department of Forestry and Estate Crops has recently established a Working Group on DFNS, and other branches of the Indonesian Government have shown growing interest in this area. The above organizations ("DFNS Partnership") have recently completed a comprehensive study, funded by AID, concluding that DFNS is a feasible option for conservation financing in Indonesia.
- The DFNS partnership is now moving forward with a joint, multi-year program to catalyze DFNS transactions in Indonesia. LWA funding will be utilized in FY 2000 to develop and implement the first "private-to-private" DFN swap (small-scale); catalyze the opening of a debt swap window by the Government of Indonesia -GOI (to support large-scale sovereign debt swaps); conceptualize, build support, and generate funding for a major *Indonesia parks rescue strategy* that could be funded by debt swap funds and other sources.

#### Timber Concession Reconfiguration Initiative (TCRI)

There are over 460 commercial-scale timber concessions across Indonesia, with most being operated in an unsustainable manner. Indonesia's economic crisis has presented some extraordinary opportunities to shift to a more sustainable commercial forestry paradigm, and to advance forest biodiversity conservation in some significant ways (e.g., to convert high biodiversity-value concession areas to conservation status, and to integrate biodiversity conservation in logging operations).

- To respond to these extraordinary opportunities, TNC launched its *Biodiversity and Timber Concessions Initiative* in mid-1998. The planning phase of this initiative has recently been completed, and TNC now has a detailed strategy and set of planning tools (such as maps and information on concession holdings) for moving forward. The planning phase included some encouraging signs that indicate great promise for the success of this initiative. For example, TNC formally submitted a proposal to the Minister of Forestry and Estate Crops outlining this idea, and recommending a joint Working Group be established to advance progress on the Initiative. The preliminary response by the GOI to this Initiative has been positive.
- TNC has also held preliminary discussions with several major timber companies, as well as multilateral and bilateral donor agencies, to explore the potential for collaboration in this area. Responses have been quite encouraging.

While the recent election process slowed momentum down somewhat, with the new Indonesian government now in place TNC expects to again move forward.

#### ◆ (8) Southeast Asia Wildlife Conservation

The World Wildlife Fund (WWF) has identified wildlife trade as one of the key threats to the health of the Lower Mekong Forests Ecoregion. This EAPEI activity provides technical assistance for combatting illegal wildlife trade in Lao PDR and neighboring countries.

EAPEI funding is being provided to WWF-US for this activity through a USAID Leaders and Associates Cooperative Agreement (LWA) that was executed in September 1999. WWF has completed and submitted a work plan for this activity to USAID and will be implementing the activity over the coming year. The activity will support the following:

- Support and guidance to the Government of Lao PDR in regard to its ascension to CITES. This assistance will include production of awareness materials on CITES, translations of relevant CITES



documents for decision-makers into the LAO language and organization of a national-level workshop in cooperation with the Wildlife Conservation Society, IUCN, and Traffic Indochina.

- Development of improved Lao PDR regulations governing wildlife trade. Assistance will be provided through WWF's participation in the Lao National Working Group for Wildlife Regulations to increased awareness and understanding of the effects of illegal wildlife trade at all levels of government and to draft appropriate regulations for Wildlife Trade.
- Strengthened law enforcement capacity at border crossings and other field sites. This will be done by training a team of national-level trainers and by developing a training curriculum with government partners to improve wildlife identification and law enforcement.
- Improved law enforcement capacity at eight border crossings between Lao, Vietnam and Thailand. WWF will conduct training at the border crossings using the national team and will also provide technical assistance and some equipment.

## **B. GOAL B: IMPROVED COASTAL RESOURCES MANAGEMENT**

Goal B of the EAPRI is a new area that was not included under the SEAEL. This goal area has two objectives; (1) improved marine resources management, and (2) improved marine biodiversity conservation.

### **Objective B.1. Improved Marine Resources Management**

#### **◆ (9) Understanding Bleaching and Other Threats to Coral Reefs**

Implementation of the Coral Reef Bleaching Activity began on October 1, 1999 as part of the USAID-URI Coastal Resources Management II (CRM II) Cooperative Agreement Year 5 Work Plan. The Program is focusing on three activities:

#### Supporting the Convention on Biological Diversity (CBD) Expert Meeting on coral bleaching

The Conference of the Parties to the Convention on Biological Diversity (CBD) requested its Subsidiary Body on Scientific Technical and Technological Advice (SBSTTA) to analyze the coral bleaching phenomenon, the potentially severe loss of biological diversity and consequent socio-economic impacts. In order to assist the work of SBSTTA at its meeting on this topic, the Executive Secretary of the Convention convened an Expert Consultation on coral bleaching in Manila, Philippines from 11-13 October 1999. Seed funding for this meeting was provided through the EAP-ICRI Coral Bleaching Program to the CBD's chosen secretariate for the meeting, the International Center for Living Aquatic Resources Management (ICLARM). CRC's Brian Crawford, attending as an observer, was requested to provide inputs on socio-economic impacts, response measures, and mitigation. The final report of this meeting provides a synthesis of the state of knowledge about the physical and biological science of coral bleaching and articulates salient questions regarding the ecological, social and economic impacts of bleaching events of various severity and duration. It further proposes a research agenda to fill the identified information gaps and recommends response options and approaches. The report is available at web address: <http://www.biodiv.org/sbstta5/docs.html>.

#### Convening a special session on coral bleaching at the 9<sup>th</sup> International Coral Reef Symposium

A session convened by URI and the U.S. State Department entitled, *Coral Bleaching: Assessing and Linking Ecological and Socio-Economic Impacts, Future Trends and Mitigation Planning*, has been accepted in the Agenda for the 9<sup>th</sup> International Coral Reef Symposium (ICRS). It is Theme 3 of the

session on Global Climate Change and Coral Reefs and one of a series considering the future of coral reefs. Papers given in the session will be published in the conference proceedings. The Coral Bleaching Program will provide limited travel support to some presenters/participants for the session on coral bleaching.

#### Planning and coordinating ecological and socio-economic studies of coral bleaching impacts.

CRC-URI is in the planning stages of subcontracting expert evaluations of the ecological and socio-economic impacts of mass bleaching events in the EAP Region. Results of the proposed studies will be submitted to peer-reviewed journals, presented at the 9ICRS session on coral bleaching and otherwise disseminated through newsletter articles, web pages, etc. Several studies have been initiated.

In addition to progress on these activities, the Coral Bleaching Activity is becoming a focus point for information on this subject. The Program has initiated correspondence with major coral bleaching researchers and compiled a library of peer-reviewed and gray literature. This information has been distributed to the field and additional communication will occur through newsletter articles (e.g. in INTERCoast), the URI-CRC web page, and the CRMII Internet site within USAID's system.

#### **◆ (10) South Pacific Coral Reef Conservation**

This activity provides support for three Special Activities of the South Pacific Environmental Program (SPREP). These are: (1) construction of permanent SPREP Headquarters (Special Activity 1); (2) the Training Workshop on developing a Permit System for the Coral Trade in Pacific Island Countries (Special Activity 2); and, (3) a TELEGRANT Scheme for the Maintenance of Marine Protected Areas (MPAs) in the Pacific Islands (Special Activity 3). EAPEI funding was provided to SPREP by USAID in September 1999, a work plan has been approved and implementation is getting underway.

##### Special Activity 1: Construction of SPREP Headquarters

SPREP member nations are contributing to the construction of a new permanent headquarters building to be constructed in Samoa. As a SPREP member nation, the U.S. has been requested to provide financial contribution. The EAPEI provided \$200,000 that is being used for expenses incurred as part of the capital infrastructure costs of the new headquarters building. These funds represent the U.S. contribution to the SPREP building fund (Australia, New Zealand, France, Papua New Guinea, Japan and others are also contributing to the building fund).

##### Special Activity 2: Workshop on a Permit System for the Coral Trade in Pacific Island Countries

Under the EAPEI, SPREP will undertake a special activity to help address the growing environmental, social, and economic problems associated with coral harvest and trade in the Pacific. A range of intergovernmental agencies, NGOs, and member governments are attempting to address the issue, but several SPREP member nations have requested assistance in developing government controlled permitting processes. The planned activities are:

- Conducting a regional training workshop on how to set up a permitting system to manage and monitor the coral trade and invest in measures which would increase the capacity of personnel involved to submit accurate reports to the CITES Trade Database
- Developing a identification guide of coral taxa by engaging a consultant, probably from Fiji, who will also help in reporting of CITES data. The coral reef taxa guide will then be modified for the Pacific cultures and environments and given to coral harvesting companies in Fiji to trial and assess its utility and effectiveness.

##### Special Activity 3: Maintenance of Marine Protected Areas

At least 34 new conservation areas in 13 Pacific Island countries have been established by local communities with the help of regional and international organizations during the past four years. Together, these areas represent more than 1.3 million hectares of rainforests, mangroves, reefs, coastal waters, and other island ecosystems. Although many of the existing conservation areas are supported by large grants from international NGOs and donors, many marine protected areas remain under traditional forms of management protection and have limited and variable funding to assist with management activities over the long-term.

Under the East Asia/Pacific Environmental Initiative, SPREP will undertake to assist such self-contained community-based marine protected area projects with a small grants program. Individual assistance grants will range from \$5,000-\$15,000, and emphasis will be on community-based efforts aimed at managing immediate threats from over-exploitation, degradation, or other human induced pressures. Application for project support under the scheme may be submitted by either a local community, a government agency, local NGO, or any combination of these. Where a proposal is submitted individually by either a local community or a locally based NGO, government endorsement of such proposal would help consideration by SPREP. The TELEGRANT scheme will be executed by SPREP in partnership with member nations over an initial 18 month pilot project period, during which time other donor support will be sought to leverage the 'seed funding' provided by this grant.

#### ◆ (11) Partnership Market Meeting (PMM)

The EAPEI provided funds to NOAA for efforts to implement the Philippines Partnership Market Meeting (PMM). In particular, EAPEI funds are supporting the establishment of a PMM Secretariat at the World Conservation Union's Washington Offices (IUCN-US) and providing technical assistance to the Government of the Philippines Department of Environment and Natural Resources to develop their National Plan of Action for the Protection of the Marine Environment from Land Based Activities. These two elements are part of the larger U.S./Philippine effort, under the auspices of APEC, to design and implement the first PMM which, if successful, will serve as a model for other PMMs to be held in the region and globally.

IUCN-US is acting as a full partner in this project, and has provided advice and staff support to the project to date. It has accessed its extensive network of local and regional NGOs to participate in the PMM. IUCN-US has also established an administrative support system to enable them to provide Secretariat support to the PMM, including the establishment of an account to receive contributions from the private sector to support the PMM process. Additional staff and resources will be added as they are needed and as additional funds (from other sources) become available.

NOAA has been working closely with the Philippines DENR to organize for the PMM and to develop the Philippines National Plan. During a successful visit to the Philippines in August 1999, DENR and NOAA representatives agreed on a September 25, 1999 delivery date for the National Framework and for establishment of the agreed private sector and interagency committees. That date is now long past, and the National Framework has not been delivered. NOAA has however received a draft of the National Framework through informal channels. It is less detailed than NOAA had originally expected, but it should be sufficient for the purpose, once it is formally approved and delivered. Also informally, NOAA has learned that DENR is considering the membership of the private sector committee, but has not been active in setting up an interagency committee.

At present, the PMM planning process is stalled due to internal Philippine government processes. NOAA's efforts, as well as those of the interagency steering committee and the private sector committee, have been put on hold pending communication from the DENR and delivery of the National Plan. NOAA remains committed to this project, and has proposed a strategy to secure delivery of the National Plan with the full commitment of the Philippine government.

The EAPEI funds have been allocated to IUCN-US for their role in this project (\$52,500). The remainder of the funds (\$40,000) are to be used to provide technical assistance to the Philippines on the National Plan. NOAA has used other funds and resources to support activities on this element and has not accessed EAP/EI funds as yet. NOAA expects that further discussions with DENR and with the U.S. country team will determine the best approach for this technical assistance.

♦ **(12) Destructive Fishing Reform: Southeast Asia**

EAPEI funds are being used by the International Marinelife Alliance (IMA) and the World Resources Institute (WRI) to expand the Indo-Pacific Destructive Fishing Reform Initiative (DFRI) by implementing components of the Initiative in Vietnam, Thailand, Sabah (Malaysia), and Hong Kong. Implementation started in June 1999, and implementation progress has been outstanding. To date IMA has undertaken the following:

- Assessment of the status of live reef fisheries and of the use of destructive practices in Vietnam and Thailand was undertaken from October 4-14, and linkages were made with local institutions. IMA is establishing agreements with local partners in Vietnam and Thailand and is making preparations to set up and operate an office in Hanoi.
- Networking with the Sabah Fisheries Department and other institutions was undertaken from October 17-23, and IMA made plans for a monitoring, inspection, and sampling training workshop.
- Setting up a monitoring station in Hong Kong was completed by IMA in June 1999. This station is monitoring the trade in live reef food fish into and through Hong Kong and will permit a more comprehensive look at the trade. A small office has been established to liaise with the Hong Kong Chamber of Seafood Merchants (HKCSM), a collaboration between importers, wholesalers and distributors, and with the Agriculture & Fisheries Department (AFD). Hong Kong is the center of the live reef food fish trade in Eastern Asia, importing around 30,000 tons of fish a year from over 25 different countries.

The expected results from this activity are:

- Validation of unconfirmed reports of the use of cyanide and other destructive fishing practices in Vietnam and Thailand and if present, determine the extent and use of cyanide or other destructive fishing practices for the capture/harvesting of live aquarium and live reef food fish;
- Expansion of the on-going relationship with the Fisheries Department of Sabah in conducting training's on monitoring, inspection, and sampling (MIS) of live reef fish exports at major shipment points in Sabah and assessments of capture areas in the country;
- Determination of the extent to which policy reform, legal development, and institutional strengthening is needed relevant to the live reef fish trade and coral reef protection;
- Improved market standards and practices in Hong Kong to discourage destructive live reef fishing practices and provide market incentives for sustainable uses of live reef fish and other marine resources;
- Strengthened adherence to the Code of Conduct for Responsible Fisheries, in the broader context of marine resources conservation and management, to establish contacts with the government representatives of the target countries to develop Action Plans to combat destructive fishing practices and build local capacity for coral reef conservation and sustainable live reef fisheries management; and,

- Published analysis and synthesis of all data gathered, lessons from the field experience, and recommendations arising from the project activities in high quality, readable publications and other media for wide dissemination to policy makers, fisheries and marine conservation managers, the international donor community, concerned non-government organizations, and the general public.

#### ◆ **(13) Destructive Fishing Reform: South Pacific Islands**

The Pacific islands Live Reef Fish Trade (LRFT) Initiative of the Nature Conservancy (TNC) is designed to provide the scientific, policy, and management advice and assistance to Pacific Island governments and communities to effectively control the expansion of the trade within the Pacific region. The overall strategy involves five broad and overlapping components: assessment and information, awareness raising, management and policy assistance, research, and training/technical assistance. The EAPEI funding is focused on the management, policy and awareness raising components.

EAPEI funding was provided to TNC activity through the USAID Leaders and Associates Cooperative Agreement (LWA) in September 1999. TNC has prepared a work plan for the activity and is starting field implementation as presented below.

- Building on TNC's initial LRFT management assistance to both Papua New Guinea and the Solomon Islands, generic management plans/strategies and licensing agreements are being developed for the Pacific region. Within the next two years, the specific management plans for PNG and the Solomon Islands will be refined and implemented. Provincial and/or area specific management plans will be developed for those areas that are expected to have LRF operations. A system for LRFT proposal and site evaluations will be developed in PNG, and modified for adoption in the Solomon Islands and where applicable, other countries in the region.
- LRFT awareness messages, materials and delivery strategies are being developed to target two broad focus groups: (i) policy and decision makers at the regional, country and provincial/state levels; and, (ii) communities/community groups within Papua New Guinea and the Solomon Islands. This work will initially be focused within Papua New Guinea and the Solomon Islands. Appropriate messages and materials will be prepared in such a way as to be usable/transferable to other countries within the Pacific region. Materials for the policy/decision makers will differ in content, style and format from those prepared for local communities. An inventory of all LRFT awareness material will be established and maintained, to be transferred to the Secretariat of the Pacific Community (SPC) once they have the necessary capacity.
- A Memorandum of Understanding for LRFT has been executed among the Secretariat of Pacific Community (SPC), the International Marinelife Alliance, The Nature Conservancy, and the World Resources Institute to ensure good program coordination among the major partners.

#### ◆ **(14) Marine Aquarium Council (MAC)**

The objective of this activity is to use market forces to transform the marine ornamentals industry in the Philippines and Indonesia into one based on quality and sustainable use of coral reefs by developing a third party certification system. The EAPEI funding is being provided to WWF-US for this activity through a USAID Leaders and Associates Cooperative Agreement (LWA) that was executed in September 1999. WWF has completed and submitted a work plan for this activity to USAID and will be implementing the activity over the coming year. The activity will support the following:

- Strengthening the capacity of MAC to undertake consultations with stakeholders, develop networks of stakeholders and provide training for certification;

- The MAC Coordinators in the Philippines and Indonesia, the MAC Director, and representatives of in- country MAC partners will undertake Stakeholder Consultations in the first quarter of FY 2000 and continue with these consultations and network development throughout FY 2000;
- A Multi-stakeholder Workshop will be organized and convened in Indonesia;
- Testing and training for certification implementation will be organized in the Philippines and Indonesia; and,
- Industry Participants in the Philippines and Indonesia will be informed of progress and included in workshops and training as appropriate.

## **Objective B.2. Improved Marine Biodiversity Conservation**

### **◆ (15) Sulu-Sulawesi Seas Marine Ecosystem (SSME)**

Through an Eco-Regional Biodiversity Conservation (ERBC) approach, the SSME Conservation Program will develop a eco-regional conservation plan while simultaneously strengthening protection at critical sites. While the development of the Eco-Regional Conservation Plan is underway, key actions are needed to support long-term conservation, both in broad-scale policy and specifically at sites already known as priority areas. As a result, WWF has launched several efforts to increase conservation action at key priority sites including Tubbataha Reefs National Marine Park, Anilao Marine Protected Area in the Philippines, Bunaken National Marine Park in Indonesia, and Semporna Island in Malaysia. These ongoing site-based efforts are designed to limit ecosystem destruction while planning for long-term conservation takes place.

The EAPEI funding is being provided to WWF for this activity through a USAID Leaders and Associates Cooperative Agreement (LWA) that was executed in September 1999. WWF has completed and submitted a work plan for this activity to USAID and will be implementing the activity over the coming year. The activity will:

- Enhance conservation action at critical sites within the SSME; (At Tubbataha and Anilao conservation will be pursued through an Enforcement Campaign. In Bunaken and Semporna, conservation will be pursued through support to Marine Protected Area projects.)
- Improve awareness and understanding of the importance of marine conservation in critical sites in the SSME (focus on Palawan); and, (The education and awareness work will take place in 5 municipalities in Palawan where marine resource exploitation is threatening important systems and species. The activities will be implement by WWF-Philippines Education and Awareness Staff and take place over the course of FY 99 and FY 2000.)
- Increase understanding of conservation priorities and needs across North Sulawesi and East Kalimantan as part of the ERBC Planning Process. (Of all areas of the SSME, North Sulawesi and East Kalimantan are the least understood in terms of their important marine resources as well as threats to these resources. As a result, a portion of LWA funds will be used to undertake assessments of coral reefs, mangroves, and sea turtle habitats as well as threats and conservation needs in these areas. These assessments will feed directly into the ERBC planning process for SSME. These assessments are critical both to the development of the Eco-Region Conservation Plan and to the formulation of targeted conservation action to be implemented through other donors support or subsequent LWA funding.)

### **◆ (16) Professional Capacity Building for Marine Protected Areas**

The US Department of the Interior (DOI) will utilize the experience and expertise of its various resource agencies to provide training in coral reef and marine protected area management to resource professionals in East Asia. The initial training is planned to complement the WWF program in the Sulu-Sulawesi Eco-Region. Implementation progress is the following:

- DOI has sent Carolyn Wiley, a law enforcement specialist, and Christopher Snipes, team leader, to the Philippines to plan for the training. They are developing a curriculum for the workshop, identifying an appropriate training site, and generating a list of participants. The team is conducting site visits in Anilao, Batangas, and in Puerto Princesa, Palawan and is meeting with a host of interested parties, including representatives from WWF/Philippines, relevant government offices; and relevant non-governmental organizations.
- The training will likely be scheduled for February 2000 in Anilao, Batangas. DOI will provide a team of protected area law enforcement specialists for the training.
- The DOI plans to seek additional EAPEI funding in future years to design training to respond to particular country issues that are not addressed in existing training programs. Training could be conducted at field sites in East Asia and the Pacific or at coral reef sites in the US. Such training could be provided on-site in the region, with trainers drawn from DOI, NOAA, and from throughout the region.

♦ **(17) Sea Turtle Conservation Workshop**

The ultimate goal of this activity, being implemented by NOAA in conjunction with State/OES, is to achieve a multilateral agreement for the protection of endangered sea turtles in the Indian Ocean region. EAP-EI funds are being used to provide logistical, technical, and other support for a regional workshop as a precursor to establishing formal negotiations for the development of a regional conservation protocol. The activity is supporting the following:

- Regional Meeting on Marine Turtle Conservation to be hosted by the Government of Australia, October 19-22, 1999; (Twenty-two countries from throughout the Indian Ocean and Southeast Asia regions met in Perth to discuss the needs and possible mechanism for regional cooperation in the conservation and management of sea turtles. In general the US was satisfied with the results of the meeting and the commitment on the part of the countries to begin negotiations toward a regional sea turtle agreement during the first half of 2000. The work to identify the key elements to be included in such an agreement met key USG objectives.
- A conference in an EAP country, possibly Thailand or Malaysia is being planned to initiate negotiations toward a regional agreement for the conservation and protection of sea turtles in the Indian Ocean/Indo-Pacific Region; and,
- Coordination with EAP, the host country government and the State/OES environmental hub officer in Bangkok, who has indicated Embassy Bangkok's interest in the issue.

♦ **(18) Sea Turtle Monitoring**

The objectives of this EAPEI activity being implemented by NOAA/NMFS- Office of Protected Resources are to:

- determine the migratory pathways and resident foraging habitats of post-nesting hawksbill turtles from representative nesting populations throughout the region;
- provide the technical expertise and capability to in-country researchers to study sea turtles using remote sensing satellite telemetry techniques; and,

- provide a means by which the nations of east Asia and the Pacific can better understand the shared nature and the important role that they each play in the conservation of regional sea turtle populations.

Implementation progress is the following:

- Funds were received in September 1999, under an MOU with NOAA and an accounting code has been made available to the Project Administrator at NMFS. Funding transfers and purchase orders to the NOAA Office of Global Programs, Service Argos, and Telonics have been initiated for submission in early 2000.
- The principal investigators, George Balazs and Peter Dutton, traveled to the Second ASEAN Symposium and Workshop on Sea Turtle Biology and Conservation from July 15-17, 1999 in Kota Kinabalu, Sabah, Malaysia. At this meeting they networked with researchers in the region to identify the specific study sites where the transmitters will be deployed. Pending final arrangements, the sites identified for collaborative deployments are Turtle Islands Protected Area (Malaysia and the Philippines), Vietnam, the Solomon Islands, and Fiji.
- NOAA is currently finalizing arrangements and exploring logistics to hold a regional workshop at the Turtle Islands Protected Area in June, 2000. This workshop will instruct participants in the proper techniques to attach the transmitters and to provide them with the expertise and knowledge to understand the data that is transmitted daily from the deployed units

## **C. GOAL C: IMPROVED ENVIRONMENTAL PLANNING AND MANAGEMENT**

### **Objective C.1. Improved Climate Change Response**

#### **◆ (19) Seasonal Climate Prediction in Southeast Asia**

Funding for this activity was provided in FY 1998 under SEAEI to the NOAA Office of Global Programs for improving regional climate forecasting models for Southeast Asia. This is being done through the International Research Institute for Climate Prediction (IRI) to create strong regional links with the ASEAN Specialized Meteorological Center (ASMC) in Singapore and to refine global climate models so they will have greater regional applications. NOAA/OGP is managing this activity from Washington.

The ASEAN Specialized Meteorological Center (ASMC) hosted a meeting 8-9 October 1999 to plan activities to strengthen a regional capacity in seasonal climate prediction in the ASEAN region. The goal of these activities is to foster the production and use of seasonal climate forecast information, thereby reducing societal losses due to climate variability and assisting to achieve sustainable development. Attendance at the meeting included experts from NOAA, Office of Global Programs; senior representatives of eight ASEAN meteorological services (including seven Directors or equivalents); the International Research Institute for Climate Prediction (IRI); the Asian Disaster preparedness Center (ADPC); the World Meteorological Organization (WMO); and ASMC.

The group agreed to a four-pronged approach, with each activity including a training/capacity building component:

- Installation of a validated state-of-the-art dynamical model for downscaling of seasonal predictions in the ASEAN region at ASMC. This activity will begin when ASMC's upgraded computer system becomes available (end of 1999/first quarter 2000), with expected date of completion during the second quarter of 2000. A training program for all ASEAN countries to conduct verification studies on model output is planned, either at ASMC or in conjunction with the climate outlook forum (see activity #2 below).



- Climate outlook forum training workshop. Regional forecasters will identify the current most suitable suite of seasonal forecasting methods for the ASEAN region, with a regional climate forecast produced in order to provide advice to policy makers in advance on the 2000 dry season. Venue will be Bangkok, either second or third week in April 2000.
- Workshop to increase communication between producers and users of climate information. Venue will be Manila, date third quarter of 2000.
- Various application projects to demonstrate potential methods of using and assessing the value of climate forecasting information. Several proposals have been received and are being reviewed.

#### ◆ (20) ASEAN Smoke and Haze Monitoring (PARTS)

Funding for this activity was provided to the NOAA/National Weather Service under the SEAEI in FY 1998 and then supplemented under the EAPEI in FY 1999. The National Weather Service (NWS) has revised the implementation plan for the activity to combined the SEAEI and EAPEI proposals to integrate environmental satellite forest fire detection with atmosphere aerosol transport prediction and monitoring. The project implementation is divided into six subprograms and one management element. Subprogram tasks are: (1) Atmosphere Monitoring; (2) Transport and Dispersion Modeling; (3) Satellites - DMSP/OLS; (4) Satellites - NOAA/AVHRR; (5) Satellites - MTSAT/HIRID; and. (6) Data Protocols. Subprogram task descriptions, resource allocation and designated work groups are described in the project implementation document. Project expenditures totaled \$117,390 through September 30, 1999.

The NWS was invited to the 22<sup>nd</sup> ASEAN Sub-Committee on Meteorology and Geophysics (ASCMG) meeting in Brunei, September 1999, to review and discuss project implementation. This project (referred to as PARTS in the ASEAN community) is a principal monitoring component of the ASEAN Regional Haze Action Plan. The ASEAN Committee on Science and Technology (COST) has oversight of PARTS.

Implementation highlights are the following:

- The atmosphere monitoring and modeling subprograms are under the direction of NOAA's Air Resources Laboratory (ARL). ARL met with ASEAN members in August to discuss field deployment of a surface-based atmosphere optical depth monitoring network. Various sites in Kalimantan, East Malaysia and West Malaysia have been selected. The monitoring network will provide aerosol source terms to the HYSPLIT-4 transport model.
- ARL met with the ASEAN Specialized Meteorological Center (ASMC) in November 1999 to discuss the implementation of the full HYSPLIT-4 atmosphere model. The model must be integrated with the current suite of numerical weather prediction products produced in Singapore. An April installation date is anticipated. Currently, a simplified version of the model is running at the Singapore center.
- Fire detection using the Defense Meteorological Satellite Program (DMSP) has progressed to the point where implementation of the automated data processing algorithms at the ASMC is expected sometime late February 2000. Plans are underway to bring two technical specialists from the Meteorological Service Singapore (MSS) and the Center for Remote Image Sensing and Processing (CRISP) to NOAA's National Geophysical Data Center to become familiar with the algorithms. This will occur in January 2000.
- The U.S. Air Force Space Command has extensively reviewed and agreed to NOAA's request to remove the 72-hour restriction on DMSP data. A Space Command directive will go out in December 1999 to reduce the restriction to 3 hours from real time acquisition.

- NOAA has established a high speed automated communication link to Singapore using the vBN and the National University of Singapore. Delivery of 72-hour DMSP data began in September 1999. Near real time data transmission will commence in January or February 2000.
- Discussions are underway with NOAA's National Satellite Service to implement the Fire Identification Mapping and Monitoring Algorithm using the NOAA polar orbiting satellites. This algorithm will be tuned for South East Asia. Also under discussion is the incorporation of operationally derived optical depth measurements from the NOAA polar orbiters. The fire detection and satellite-based optical depth measurements are source terms for the atmosphere transport model.
- The Japanese H-II launch vehicle was destroyed 4 minutes into flight on November 11 causing the loss of MTSAT - a geostationary platform slated to replace the aging GMS stationed over the western Pacific. The project implementation plan called for the incorporation of visible and infrared data from the Japanese MTSAT. The project is currently accessing alternative sources of satellite data that can be used for determining fire area, which

#### ◆ (21) Health Impact Monitoring

This activity was funded under SEAEI in FY 1998 with the U.S. Centers for Disease Control and Prevention (CDC) to investigate the risk factors associated with the adverse human health effects arising from air pollution from the forest and peat fires in Indonesia. CDC is implementing the activity in cooperation with the Malaysian Ministry of Health (MOH). A 3-year schedule is programmed for the activity. During the first field site visit by the study team in May-June 1999, seven US/CDC scientists worked with numerous Malaysian counterparts during the 3-week visit. The team traveled to 11 areas in 8 states and the federal district of Kuala Lumpur to assess appropriate field sites and methodologies for conducting the overall assessment.

The CDC team plans to conduct four studies in areas with different haze exposures to evaluate the impact of haze exposure. The four studies include:

- a retrospective study of children  $\leq 12$  years of age with selected respiratory and ophthalmologic conditions presenting to rural polyclinics to assess risk with haze exposure.
- a baseline cross-sectional study of current biological and environmental exposures to the constituents of haze among the children  $\leq 12$  years of age identified in the retrospective study, as well as a survey of risk factors for respiratory and ophthalmologic illnesses among households of selected children. When transboundary haze recurs, this group will be used to identify a cohort to be followed for 6 months (phase two) to conduct environmental exposure assessments, clinical examinations, and household surveys to assess risk factors.
- a retrospective study of polyclinic records of pregnant women and their newborns to determine relationships between maternal exposure to haze during periods of pregnancy and adverse birth outcomes, primarily low birth weight.
- an assessment of excess deaths and hospital re-admissions among adults  $\geq 50$  years of age admitted to hospitals with selected cardiopulmonary diseases prior to the 1997 haze.

During the site visit, the team developed further details of the study protocols in collaboration with MOH counterparts, assessed the availability of data needed for the study, obtained approval to receive critical meteorological information, and developed plans for several capacity-building activities. At the end of the visit, the CDC team presented "Analyses related to environmental exposures and health outcomes: the disaster approach" at the Workshop on Analysis of Data Related to Haze and Public Health, sponsored by the MOH and CDC.

## ◆ (22) Climate Forecasting Applications

Under this SEAEI funded activity, the USAID Office of Foreign Disaster Assistance (OFDA) is providing a grant to the Asia Disaster Preparedness Center (ADPC) in Thailand for improving access to climate related information to be used by decision makers, program designers and implementers for improved disaster contingency planning. Implementation progress has been the following:

- For Indonesia, a national start-up workshop was conducted in February 1999. The National Disaster Management Coordination Board (BAKORNAS PB) set up a working group with which ADPC is working. The collection of data is underway and will be completed by the end of February 2000. A national workshop is planned in April may 2000. The ADPC has established close linkages with the Indonesian Climate Variability Program of the Agency for the Assessment and Application of Technology (BPPT) in Indonesia and with national and international initiatives on Forest Fire issues in Indonesia. This will help in exploring opportunities for effective application of climate forecasts in forest fire management.
- For Vietnam, a national start-up workshop was conducted in April 1999. Under the leadership of the Disaster Management Center (DMC) a working group was constituted to implement the project. The first phase of data collection has been completed. The data collection will be completed by January 1999. A national workshop is planned March 2000.
- For the Philippines, progress has been slow. Although the Philippines was represented in the start-up workshop of the activity, the follow on response from the country has been slow. In October 1999, the Chairman, ADPC Board of Trustees, ADPC Executive Director and the ADPC Director Emeritus paid a visit to the Philippines and met with a number of institutions. A start-up workshop for the project is now being planned for January 2000 under the leadership of the National Disaster Coordination Council (NDCC).
- After the 1997-98 El Nino a number of initiatives by a range of national, regional and international agencies have come up to look at different aspects of extreme climate events. This activity has made an attempt to establish a dialogue and to develop working relationship with these initiatives. Some of these are with:
  - ASEAN Specialized Meteorological Center (ASMC); APDC has kept the ASMC informed of the work being done under this activity. ASMC was represented at the start-up strategy , and ADPC has been invited to ASMC sponsored meetings which has helped in strengthening the linkage between the two organizations.
  - The National Center for Atmospheric Research (NCAR); NICAR has launched a program to study the impact of El Nino 1997-98 in 16 countries around the world. Indonesia is one of the study countries and the ADPC is formally represented on this project as responsible for the Indonesia study. ADPC was invited to attend the start-up meeting held in Geneva in July 1999.
  - START-Southeast Asia based at the Chulalongkorn University in Bangkok. START-SEA has established a network to disseminate information on ongoing research on different aspects of climate science in the Southeast Asian region. ADPC has held discussion with START-SEA and the two centers have agreed in principle to explore collaborative opportunities. There is a possibility of expanding the scope of the ECE program to Thailand.

## ◆ (23) Workshop on Kyoto Mechanisms

This activity of STATE/OES provided technical and logistical support through a USAID contractor to the “Consultative Meeting on the Kyoto Mechanisms,” held in Bali, Indonesia from August 30-31, 1999. The meeting was a useful and timely opportunity to exchange views on the three Kyoto market-based mechanisms. The meeting was hosted by the U.S. and Japan, in conjunction with the Government of Indonesia, other participating countries included Brunei, Malaysia, Philippines, Singapore, Thailand, Vietnam, Japan, Canada, Australia, and New Zealand. The workshop also benefited from the participation

of the private sector. Organizations and companies represented were the Pew Center on Global Climate Change, Det Norske Veritas (an international certification firm), Chevron, Ballard (a North American fuel cell manufacturer), Natsource (a U.S. emissions trading brokerage firm), Tokyo Gas and Electric, Toyota, JGC Corporation (a Japanese petroleum conglomerate) and the Association of Indonesian Forest Concession Companies.

The sessions featured government and other expert presentations on design and operational aspects of the Clean Development Mechanism (CDM), joint implementation, and emissions trading as well as on emission reduction and sequestration project case studies and public-private partnerships. Consensus emerged around the need to adopt a more specific work program on all three mechanisms at the fifth session of the Conference of Parties (COP-5) to the UN Framework Convention on Climate Change (FCCC) in Bonn this November in order to make sufficient progress by COP-6 now scheduled for November 2000. All participants concurred that the contributions from the private sector representatives were helpful in making concepts such as baseline calculations and risk-management trading more concrete through presentations on actual CDM-like projects and on emissions transactions that are happening now in the absence of official rules. A non-negotiated Chairmen's Statement was circulated after the meeting along with a final agenda and participant list.

#### ◆ (24) National Action Plans Conference

Globally the US Country Studies Program (USCSP) is working with eighteen countries to help achieve meaningful participation in the FCCC through the development of National Climate Change Action Plans. This activity is supporting an International Conference on National Action Plans. The Conference is being held in Manila on December 7-10, 1999. The conference is planned to include:

- Presentations by countries that have completed or are close to completing national action plan or substantive national communications;
- Identification and discussion of key steps, issues, and problems in the development of national action plans;
- Basic introductions to analytical tools for preparing plans, and evaluating and developing alternative policies, programs, and measures;
- Overviews of financial, technical, and other resources available to assist in the development of plans and their subsequent implementation; and,
- The preparation and publication of a comprehensive Conference Report.

The expected results of this activity are:

- Improved and expedited national communications from developing countries including concrete policies, programs, and measures for reducing net greenhouse gas emissions; and
- Published Conference Report, with translation into several languages.

#### ◆ (25) Improved Forest Emissions Inventory (FORCLIMAT)

The FORCLIMAT activity is being implemented by EPA to help three Asian developing countries that are influential in the UNFCCC climate change negotiations to evaluate how their forests could provide national and global climate change benefits, in addition to the existing stream of economic, timber product, and development benefits from forests. Forest "sinks" could help mitigate greenhouse gas emissions, potentially through the three countries' participation in the Kyoto Protocol flexible mechanisms. FORCLIMAT is intended to help the participating countries to better understand the climate benefits from, and policy options for, management of forest (and possibly agricultural) sinks in the climate convention context.

Indonesia, Malaysia, and Philippines have been selected as the focus countries. For these three countries, the activity will:

- Help develop in-country technical capacity of selected experts to assess GHG emissions and potential sequestration from forest and possibly agricultural land management policies and field practices, by providing training in analytic tools and GHG inventory methods;
- Assess the potential of national-level policies and projects to provide GHG mitigation benefits for each country, using biophysical and economic criteria, and apply lessons learned from other regions' Joint Implementation forestry experiments to help the three countries begin to identify project activities capable of producing credible and verifiable carbon, socioeconomic, and other benefits; and
- Begin to introduce the concepts of forestry project evaluation and investment in the climate change context, by commencing public/private dialogs that may help facilitate additional future activities under this or other programs.

Progress in implementing this activity is uncertain, since EPA has not provided an implementation progress report.

## **Objective C.2. Improved Pollution Prevention**

### **◆ (26) Air Pollution Monitoring**

Under this SEAEI activity, funded in FY 1998, the U.S. Environmental Protection Agency (EPA) is providing technical assistance and training to the governments of the region in the development of an early warning system to predict air quality problems, including the development of a Pollutant Standard Index (PSI). PSI is a useful and much-requested activity in Asia. Such a system easily communicates air quality problems, builds public awareness of air pollution, links air pollution to everyday activities, and provides the public with simple actions they can take to reduce air pollution. Monitoring data generated by the network could serve as indicators to measure the effectiveness of the fire prevention efforts on changes in air quality, as well as to gauge the effectiveness of other air quality improvements in urban areas in the region, such as the implementation of a mobile source control program or development of industrial pollution controls. Implementation progress is the following:

- In Malaysia, EPA has continued its work on air monitoring. EPA air monitoring experts, in two trips to Malaysia, conducted a technical and operational audit of the air monitoring network, with the goal to assist the Malaysian Department of the Environment to upgrade their monitoring capabilities. The next step will be to work with them on data analysis and data interpretation, so that they can better understand what the air monitoring data tells them. EPA is concerned that the Government of Malaysia has made a decision to withhold air monitoring information from the public. However, EPA understands that this decision was made at the very highest levels of the government, and that their counterparts, the Malaysian Department of Environment, do not have control over that decision. The hope is that EPA can give them the tools to allow them to better understand the air monitoring information and interpret it, leading towards providing public information about air quality.
- Regionally, last year EPA sponsored a regional workshop on Particulates in the Air, working with the Singapore Ministry of Environment. Fine particulates are the major component of the air pollution from the biomass burning. Seven countries in the region participated in the workshop, along with 4 US companies who manufacture air monitoring technologies.

#### ◆ (27) Pollution Monitoring and Mitigation

This activity was an add-on to EAPEI, in that it was required to deal with an emergency pollution incidence that was not anticipated at the time proposals for EAPEI were being prepared. Under this activity EPA sends environmental response teams to take soil, air, and water samples to determine environmental and human health risks from potential contaminants. EPA experts are available to provide recommendations for proposed course of clean-up and recommend training for host country officials. EPA works with host country institutions to answer questions and assure sufficient understanding of the technical findings. While EPA experts would not be expected to clean up sites, in some cases EPA experts could provide technical assistance during preparation for and actual clean-up of site. The specific tasks are:

- EPA dispatched an environmental response team to provide technical assistance and analysis to assess the risk from the chemicals unearthed at the Bor Fai Airstrip in Hua Hin, Thailand.
- EPA took soil samples to assess the potential risk from chemicals unearthed at Bor Fai, make recommendations for clean-up and provide technical assistance during clean-up of Bor Fai site.
- As needed on an emergency basis, EPA will dispatch an environmental response team to another location in Southeast Asia as agreed to between USAID Global Bureau and EPA's Office of International Activities.

#### ◆ (28) Reduction of Urban Air Pollution

Under this activity, EPA has a twofold plan to reduce local air pollution and greenhouse gas emissions by reducing emissions from vehicles and reducing kilometers traveled. These are:

- Develop a practical and useful "toolkit" or "resource guide" of information, tools, models, training materials and other products related to reducing transportation and vehicular air pollution in urban areas in Asia; and
- Provide technical assistance using this "toolkit" in a selected urban area in Asia, building upon the activities already underway in the region. This demonstration project could then be replicated in other communities across Asia.

Building on EPA's domestic and international experience in phasing lead out of gasoline, as well as its ongoing climate change work, the toolkit will draw together technical, planning, and financing approaches to assist communities in launching urban air pollution control programs. The emphasis of these programs will be on mobile source emission reductions and transportation controls and planning. EPA and other partners will then demonstrate this approach in using this toolkit as a basis for a focused technical assistance activity in a selected urban area in Southeast Asia. The approach will include development of a baseline air pollution and greenhouse gas emission inventory and establishment of tools for measuring reduction.

The funding for this project was only recently transferred to EPA, so they have just gotten started on this project. They are undertaking several activities:

- Support for a Sustainable Transport and Clean Air conference in Jakarta in May, 2000;
- Initiation of a Transportation/Air Quality Toolkit for use by developing countries in dealing with their transportation/air quality programs. EPA is working with the International Council for Local Environmental Initiatives (ICLEI), the World Bank, and others on this.
- Planning to pilot test this toolkit in an as-yet-to-be-determined urban area sometime in 2000.

<b>III. BUDGET SUMMARY</b>		(US \$'s)	<b>AGENCY</b>	<b>SEAEI</b>	<b>EAPEI</b>	<b>TOTAL</b>
<b>Goal A: Improved Forestry and Land Use Management</b>						
Objective A.1. <u>Improved Fire Management and Prevention</u>						
(1)	Regional Fire Coordination		USDA/FS	200,000	293,750	493,750
(2)	Coal Seam and Peat Fire Suppression		DOI/OSM	1,000,000	462,500	1,462,500
Objective A.2. <u>Improved Forest Management Techniques and Policies</u>						
(3)	Causes and Impacts of Fires		CIFOR	700,000	---	700,000
(4)	Alternatives to Slash and Burn Agriculture		ICRAF	650,000	---	650,000
(5)	Reduced Impact Harvesting – Indonesia		TFF	200,000	---	200,000
(6)	Reduced Impact Harvesting – Regional		USDA/FS	---	293,750	293,750
Objective A.3. <u>Improved Biodiversity Conservation</u>						
(7)	Improved Forest Conservation Mgt.		TNC	---	212,500	212,500
(8)	Southeast Asia Wildlife Conservation		WWF	---	161,875	161,875
<b>Goal B: Improved Coastal Resources Management</b>						
Objective B.1. <u>Improved Marine Resources Management</u>						
(9)	Bleaching and Other Threats to Coral Reefs		URI	---	138,750	138,750
(10)	South Pacific Coral Reef Conservation		SPREP	200,000	138,750	338,750
(11)	Partnership Market Meeting		NOAA	---	92,500	92,500
(12)	Destructive Fishing Reform: SEA		IMA	---	231,250	231,250
(13)	Destructive Fishing Reform: Pacific		TNC	---	185,000	185,000
(14)	Marine Aquarium Council	WWF	---	92,500	92,500	
Objective B.2. <u>Improved Marine Biodiversity Conservation</u>						
(15)	Sulu-Sulawesi Seas Marine Ecosystem		WWF	---	185,000	185,000
(16)	Capacity Building for Marine Protected Areas		DOI	---	46,250	46,250
(17)	Sea Turtle Conservation Workshops		NOAA/STATE	---	140,000	140,000
(18)	Sea Turtle Monitoring		NOAA/NMFS	---	64,375	64,375
<b>Goal C: Improved Environmental Planning and Management</b>						
Objective C.1. <u>Improved Climate Change Response</u>						
(19)	Climate Prediction		NOAA/OGP	455,000	---	455,000
(20)	ASEAN Smoke and Haze Monitoring		NOAA/NWS	600,000	231,250	831,250
(21)	Health Impact Monitoring		CDC	270,000	---	270,000
(22)	Climate Forecasting Applications		ADPC	425,000	---	425,000
(23)	Workshop on Kyoto Mechanisms		STATE/OES	---	69,375	69,375
(24)	National Climate Action Plans Conf.		STATE/OES	---	92,500	92,500
(25)	Improved Forest Emissions Inventory		EPA	---	185,000	185,000
Objective C.2. <u>Improved Pollution Prevention</u>						
(26)	Air Pollution Monitoring		EPA	300,000	---	300,000
(27)	Pollution Monitoring & Mitigation		EPA	---	69,375	69,375
(28)	Reduction of Urban Air Pollution		EPA	---	138,750	138,750
Program Management & Monitoring			USAID	---	300,000	300,000
<b>TOTAL</b>				<b>5,000,000</b>	<b>3,825,000</b>	<b>8,825,000</b>
<b>IV. US GOVERNMENT ROLES AND RESPONSIBILITIES FOR EAPEI</b>						

### A. Overall Program Management

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